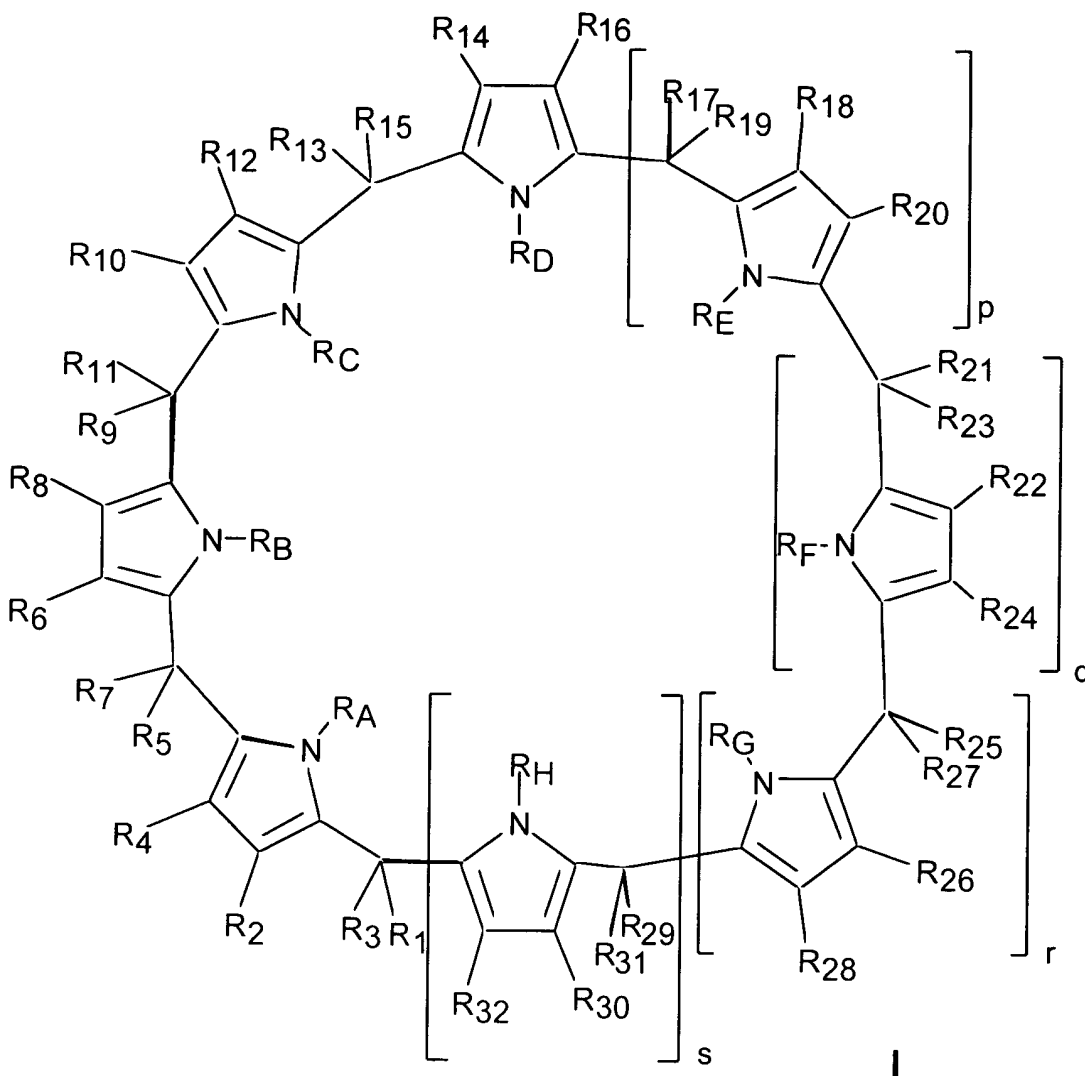


119. (New) The composition of claim 118 wherein the calix[n]pyrrole macrocycle has structure I:



wherein

when n is 5, $p = 1$, $q = r = s = 0$, R_1 to R_{20} are independently substituents as listed in paragraph i) below, and $R_A - R_E$ are independently substituents as listed in paragraph ii) below;

when n is 6, $p = q = 1$, $r = s = 0$, R_1 to R_{24} are independently substituents as listed in paragraph i) below, and $R_A - R_F$ are independently substituents as listed in paragraph ii) below;

when n is 7, $p = q = r = 1$, $s = 0$, R_1 to R_{28} are independently substituents as listed in paragraph i) below, and $R_A - R_G$ are independently substituents as listed in paragraph ii) below;

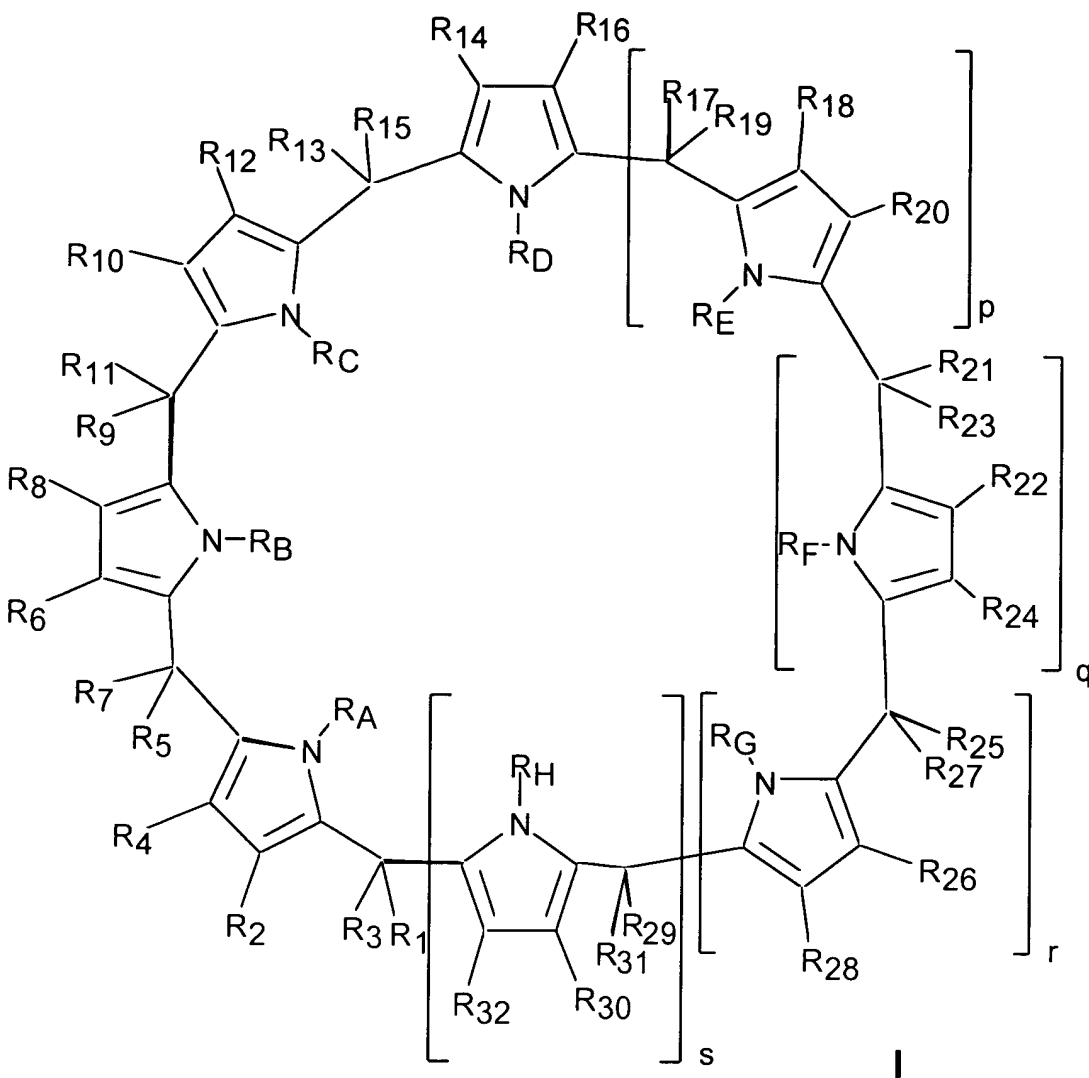
when n is 8, $p = q = r = s = 1$, R_1 to R_{32} are independently substituents as listed in paragraph i) below, and $R_A - R_H$ are independently substituents as listed in paragraph ii) below;

- i) hydrogen, halide, hydroxyl, alkyl, alkenyl, alkynyl, aryl, alkylaryl, nitro, phospho, formyl, acyl, hydroxyalkyl, alkoxy, hydroxyalkoxy, hydroxyalkenyl, hydroxyalkynyl, saccharide, carboxy, carboxyalkyl, carboxyamide, carboxyamidealkyl, amino, amido, aminoalkyl, phosphoalkyl, alkyl sulfoxide, alkyl sulfone, alkyl sulfide, tetrahydropyran, tetrahydrothiapyran, thioalkyl, haloalkyl, haloalkenyl, haloalkynyl, alkyl ester, a site-directing molecule, a catalytic group, a reporter group, a binding agent, or a couple that is coupled to a site-directing molecule, to a catalytic group, to a reporter group, or to a binding agent;
- ii) hydrogen, alkyl, aminoalkyl, alkylsulfone, carboxy alkyl, carboxyamidealkyl, phospho alkyl, alkyl sulfoxide, alkyl sulfone, alkyl sulfide, haloalkyl, aryl, N-oxide, dialkylamino, carbamate, or arylsulfonyl;

wherein odd-numbered R substituents are other than hydrogen.

120. (New) A composition comprising a calix[n]pyrrole macrocycle that has n pyrrole rings linked in α positions via sp^3 hybridized *meso*-carbon atoms, wherein neither non-pyrrole substituent of the *meso*-carbon atoms is hydrogen, at least one pyrrole ring comprises a non-hydrogen β -substituent, and wherein n is 4, 5, 6, 7, or 8; the macrocycle noncovalently-complexed to a molecular or anionic species.

121. (New) The composition of claim 120 wherein the calix[n]pyrrole macrocycle has structure I:



wherein

when n is 4, $p = q = r = s = 0$, $R_1 - R_{16}$ are independently substituents as listed in paragraph i) below, and $R_A - R_D$ are independently substituents as listed in paragraph ii) below;

when n is 5, $p = 1$, $q = r = s = 0$, R_1 to R_{20} are independently substituents as listed in paragraph i) below, and $R_A - R_E$ are independently substituents as listed in paragraph ii) below;

when n is 6, $p = q = 1$, $r = s = 0$, R_1 to R_{24} are independently substituents as listed in paragraph i) below, and $R_A - R_F$ are independently substituents as listed in paragraph ii) below;

when n is 7, $p = q = r = 1$, $s = 0$, R_1 to R_{28} are independently substituents as listed in paragraph i) below, and $R_A - R_G$ are independently substituents as listed in paragraph ii) below;

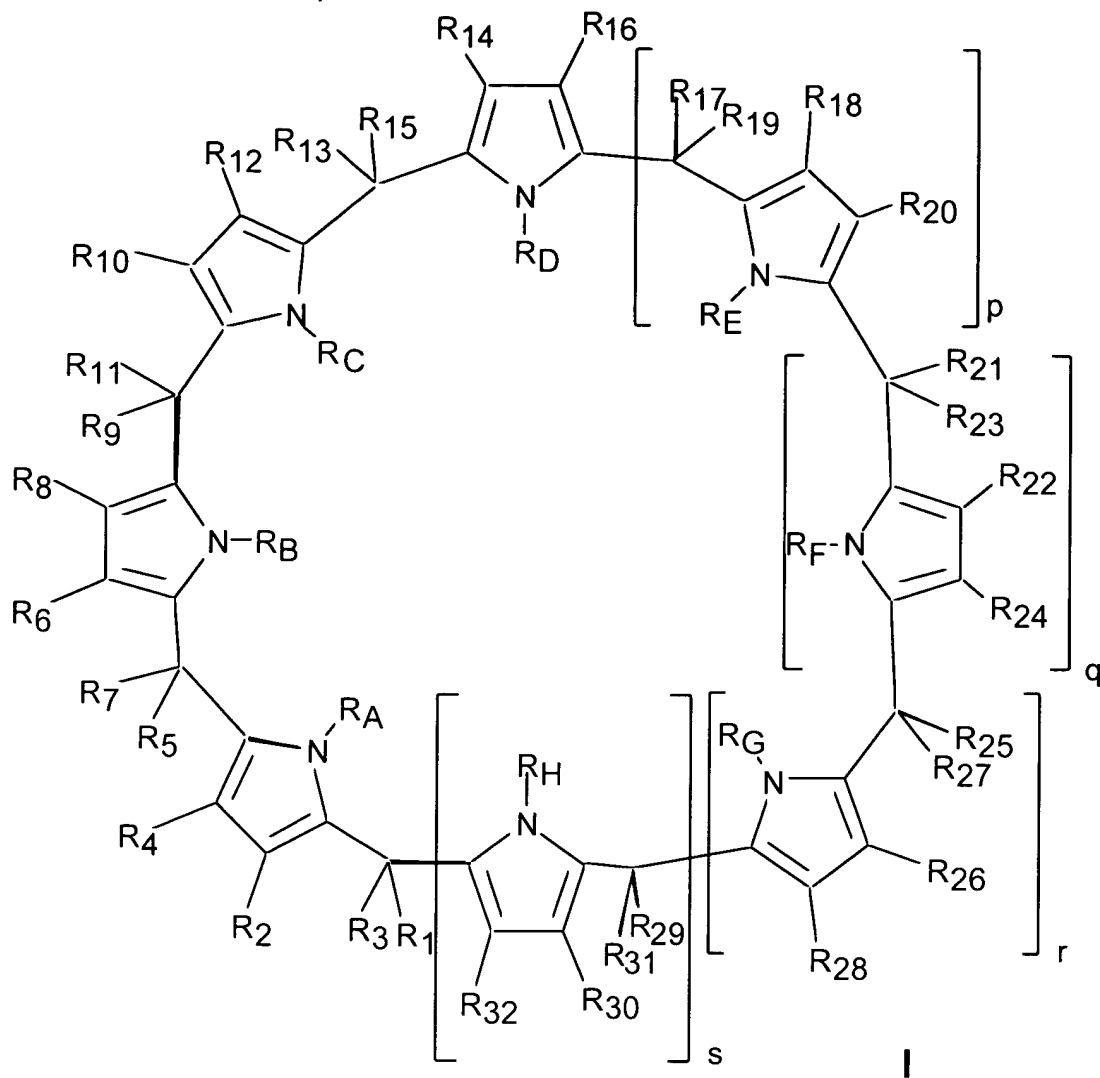
when n is 8, $p = q = r = s = 1$, R_1 to R_{32} are independently substituents as listed in paragraph i) below, and $R_A - R_H$ are independently substituents as listed in paragraph ii) below;

- i) hydrogen, halide, hydroxyl, alkyl, alkenyl, alkynyl, aryl, alkylaryl, nitro, phospho, formyl, acyl, hydroxyalkyl, alkoxy, hydroxyalkoxy, hydroxyalkenyl, hydroxyalkynyl, saccharide, carboxy, carboxyalkyl, carboxyamide, carboxyamidealkyl, amino, amido, aminoalkyl, phosphoalkyl, alkyl sulfoxide, alkyl sulfone, alkyl sulfide, tetrahydropyran, tetrahydrothiapyran, thioalkyl, haloalkyl, haloalkenyl, haloalkynyl, alkyl ester, a site-directing molecule, a catalytic group, a reporter group, a binding agent, or a couple that is coupled to a site-directing molecule, to a catalytic group, to a reporter group, or to a binding agent;
- ii) hydrogen, alkyl, aminoalkyl, alkylsulfone, carboxy alkyl, carboxyamidealkyl, phospho alkyl, alkyl sulfoxide, alkyl sulfone, alkyl sulfide, haloalkyl, aryl, N-oxide, dialkylamino, carbamate, or arylsulfonyl;

wherein odd-numbered R substituents are other than hydrogen and at least one even-numbered R substituent is other than hydrogen.

122. (New) A composition comprising a calix[n]pyrrole macrocycle that has n pyrrole rings linked in α positions via sp^3 hybridized *meso*-carbon atoms, wherein neither non-pyrrole substituent of the *meso*-carbon atoms is hydrogen, at least one pyrrole ring comprises a non-hydrogen-substituted nitrogen atom, and wherein n is 4, 5, 6, 7, or 8; the macrocycle noncovalently-complexed to a molecular or anionic species.

123. (New) The composition of claim 122 wherein the calix[n]pyrrole macrocycle has structure I:



wherein

when n is 4, $p = q = r = s = 0$, $R_1 - R_{16}$ are independently substituents as listed in paragraph i) below, and $R_A - R_D$ are independently substituents as listed in paragraph ii) below;

when n is 5, $p = 1$, $q = r = s = 0$, R_1 to R_{20} are independently substituents as listed in paragraph i) below, and $R_A - R_E$ are independently substituents as listed in paragraph ii) below;

when n is 6, $p = q = 1$, $r = s = 0$, R_1 to R_{24} are independently substituents as listed in paragraph i) below, and $R_A - R_F$ are independently substituents as listed in paragraph ii) below;

when n is 7, $p = q = r = 1$, $s = 0$, R_1 to R_{28} are independently substituents as listed in paragraph i) below, and $R_A - R_G$ are independently substituents as listed in paragraph ii) below;

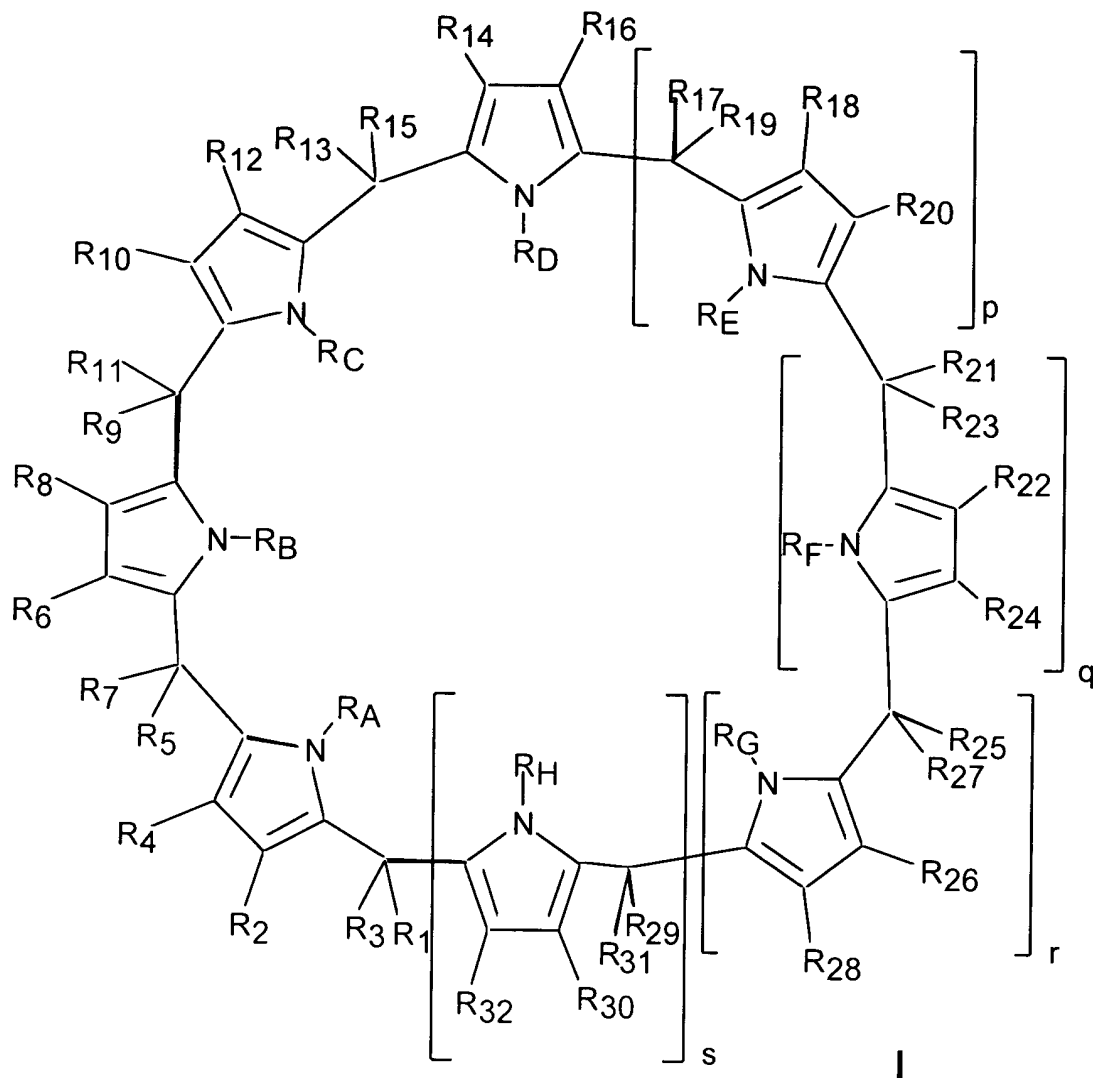
when n is 8, $p = q = r = s = 1$, R_1 to R_{32} are independently substituents as listed in paragraph i) below, and $R_A - R_H$ are independently substituents as listed in paragraph ii) below;

i) hydrogen, halide, hydroxyl, alkyl, alkenyl, alkynyl, aryl, alkylaryl, nitro, phospho, formyl, acyl, hydroxyalkyl, alkoxy, hydroxyalkoxy, hydroxyalkenyl, hydroxyalkynyl, saccharide, carboxy, carboxyalkyl, carboxamide, carboxamidealkyl, amino, amido, aminoalkyl, phosphoalkyl, alkyl sulfoxide, alkyl sulfone, alkyl sulfide, tetrahydropyran, tetrahydrothiapyran, thioalkyl, haloalkyl, haloalkenyl, haloalkynyl, alkyl ester, a site-directing molecule, a catalytic group, a reporter group, a binding agent, or a couple that is coupled to a site-directing molecule, to a catalytic group, to a reporter group, or to a binding agent;

ii) hydrogen, alkyl, aminoalkyl, alkylsulfone, carboxy alkyl, carboxamidealkyl, phospho alkyl, alkyl sulfoxide, alkyl sulfone, alkyl sulfide, haloalkyl, aryl, N-oxide, dialkylamino, carbamate, or arylsulfonyl;

wherein odd-numbered R substituents are other than hydrogen and at least one of $R_A - R_H$ is other than hydrogen.

124. (New) A composition comprising a calix[n]pyrrole macrocycle that has n pyrrole rings linked in α positions via sp^3 hybridized *meso*-carbon atoms, wherein neither non-pyrrole substituent of the *meso*-carbon atoms is hydrogen and wherein n is 4, 5, 6, 7, or 8; the macrocycle noncovalently-complexed to a molecular or anionic species, wherein the calix[n]pyrrole macrocycle has structure I:



wherein


when n is 4, $p = q = r = s = 0$, $R_1 - R_{16}$ are independently substituents as listed in paragraph i) below, and $R_A - R_D$ are independently substituents as listed in paragraph ii) below;

when n is 5, $p = 1$, $q = r = s = 0$, R_1 to R_{20} are independently substituents as listed in paragraph i) below, and $R_A - R_E$ are independently substituents as listed in paragraph ii) below;

when n is 6, $p = q = 1$, $r = s = 0$, R_1 to R_{24} are independently substituents as listed in paragraph i) below, and $R_A - R_F$ are independently substituents as listed in paragraph ii) below;

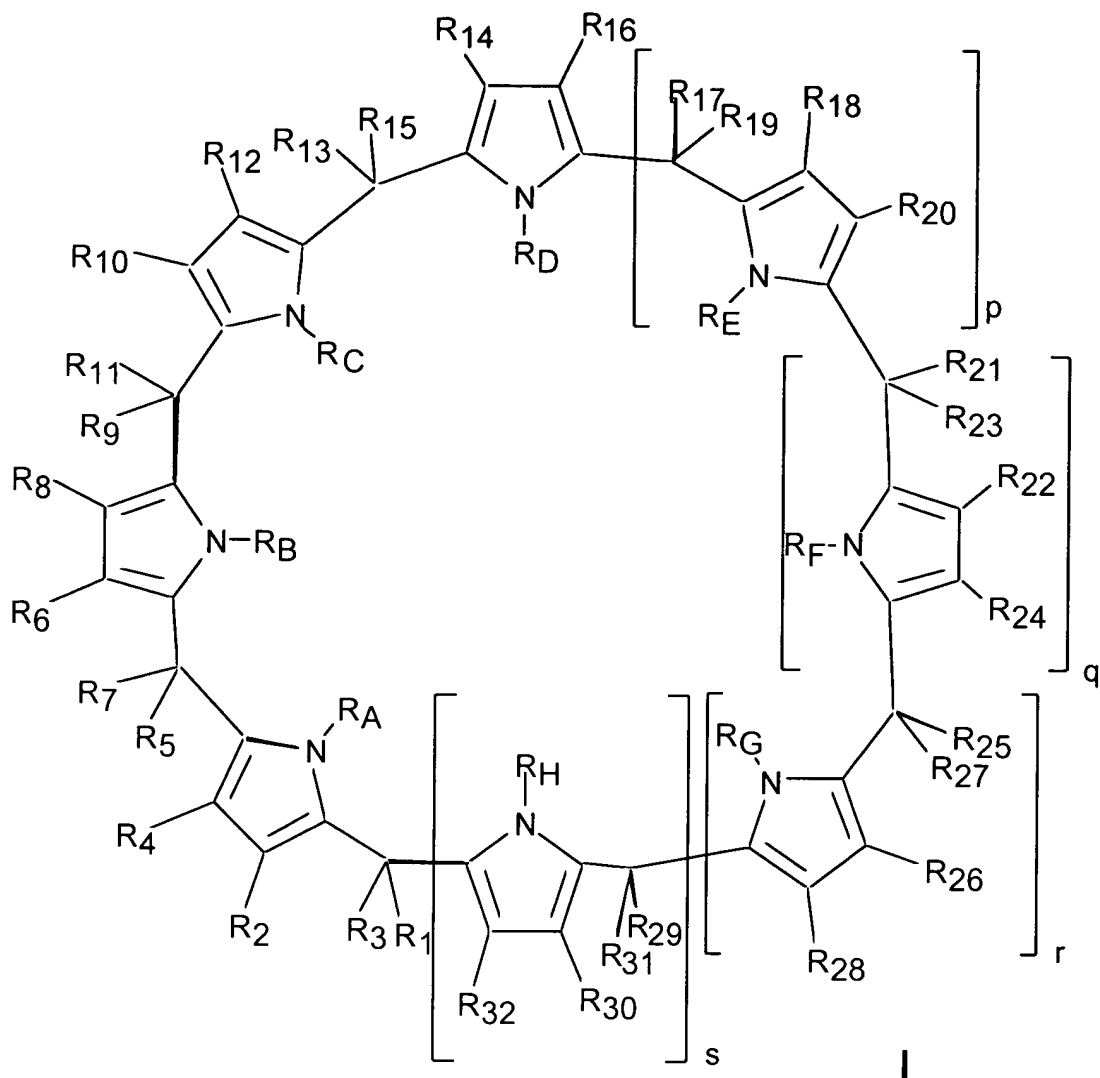
when n is 7, $p = q = r = 1$, $s = 0$, R_1 to R_{28} are independently substituents as listed in paragraph i) below, and $R_A - R_G$ are independently substituents as listed in paragraph ii) below;

when n is 8, $p = q = r = s = 1$, R_1 to R_{32} are independently substituents as listed in paragraph i) below, and $R_A - R_H$ are independently substituents as listed in paragraph ii) below;

- 
- i) hydrogen, halide, hydroxyl, alkyl, alkenyl, alkynyl, aryl, alkylaryl, nitro, phospho, formyl, acyl, hydroxyalkyl, alkoxy, hydroxyalkoxy, hydroxyalkenyl, hydroxyalkynyl, saccharide, carboxy, carboxyalkyl, carboxyamide, carboxyamidealkyl, amino, amido, aminoalkyl, phosphoalkyl, alkyl sulfoxide, alkyl sulfone, alkyl sulfide, tetrahydropyran, tetrahydrothiapyran, thioalkyl, haloalkyl, haloalkenyl, haloalkynyl, alkyl ester, a site-directing molecule, a catalytic group, a reporter group, a binding agent, or a couple that is coupled to a site-directing molecule, to a catalytic group, to a reporter group, or to a binding agent;
- ii) hydrogen, alkyl, aminoalkyl, alkylsulfone, carboxy alkyl, carboxyamidealkyl, phospho alkyl, alkyl sulfoxide, alkyl sulfone, alkyl sulfide, haloalkyl, aryl, N-oxide, dialkylamino, carbamate, or arylsulfonyl;

wherein odd-numbered R substituents are other than hydrogen and at least two substituents of paragraph i) or ii) are coupled to form a bridged structure, and when coupled to form a bridged structure, nonbridged substituents are as defined in paragraph i) or ii).

125. (New) A composition comprising a calix[n]pyrrole macrocycle that has n pyrrole rings linked in α positions via sp^3 hybridized *meso*-carbon atoms, wherein neither non-pyrrole substituent of the *meso*-carbon atoms is hydrogen and wherein n is 4, 5, 6, 7, or 8; the macrocycle noncovalently-complexed to a molecular or anionic species, wherein the calix[n]pyrrole macrocycle has structure I:



wherein

when n is 4, $p = q = r = s = 0$, $R_1 - R_{16}$ are independently substituents as listed in paragraph i) below, and $R_A - R_D$ are independently substituents as listed in paragraph ii) below;

when n is 5, $p = 1$, $q = r = s = 0$, R_1 to R_{20} are independently substituents as listed in paragraph i) below, and $R_A - R_E$ are independently substituents as listed in paragraph ii) below;

when n is 6, $p = q = 1$, $r = s = 0$, R_1 to R_{24} are independently substituents as listed in paragraph i) below, and $R_A - R_F$ are independently substituents as listed in paragraph ii) below;

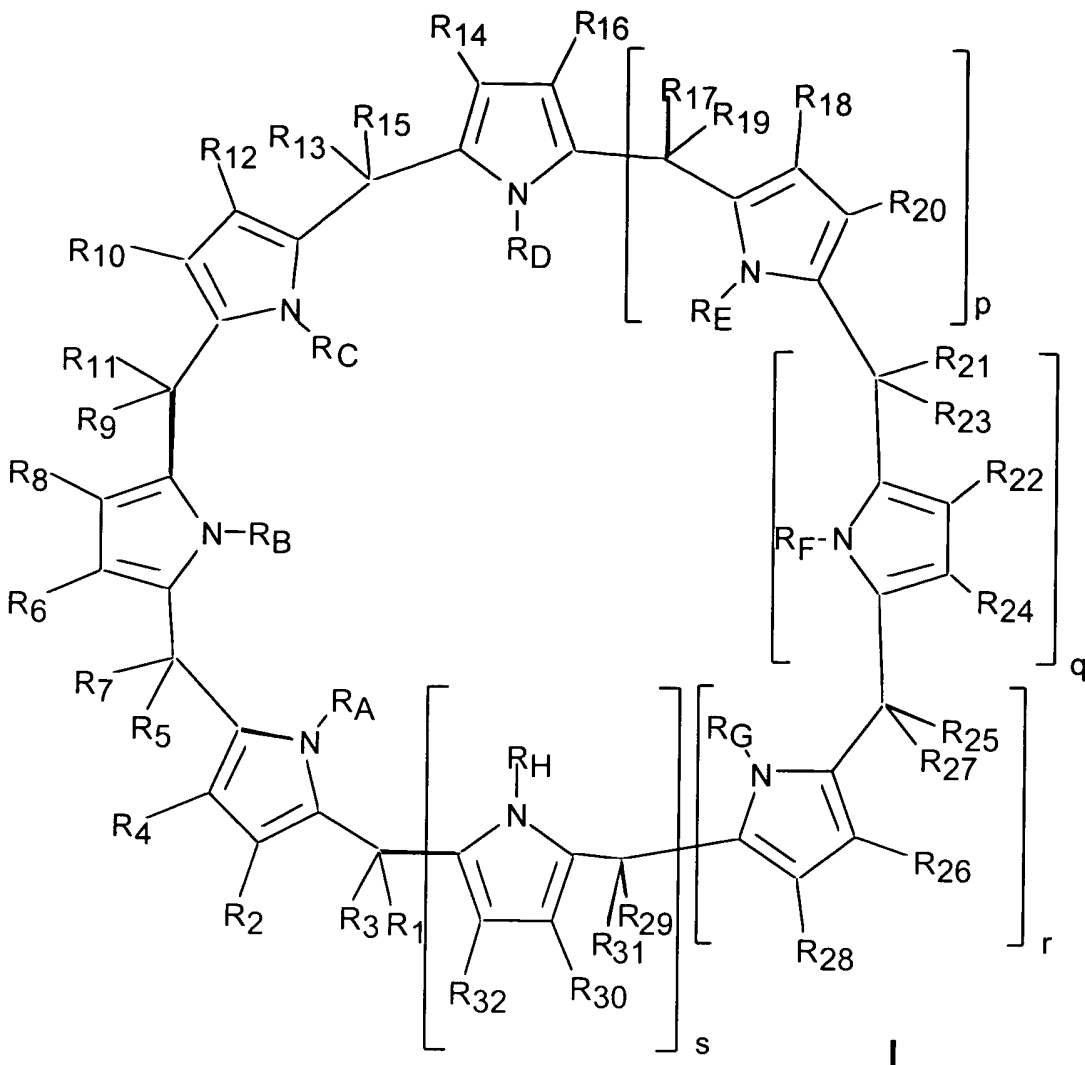
when n is 7, $p = q = r = 1$, $s = 0$, R_1 to R_{28} are independently substituents as listed in paragraph i) below, and $R_A - R_G$ are independently substituents as listed in paragraph ii) below;

when n is 8, $p = q = r = s = 1$, R_1 to R_{32} are independently substituents as listed in paragraph i) below, and $R_A - R_H$ are independently substituents as listed in paragraph ii) below;

- i) hydrogen, halide, hydroxyl, alkyl, alkenyl, alkynyl, aryl, alkylaryl, nitro, phospho, formyl, acyl, hydroxyalkyl, alkoxy, hydroxyalkoxy, hydroxyalkenyl, hydroxyalkynyl, saccharide, carboxy, carboxyalkyl, carboxyamide, carboxyamidealkyl, amino, amido, aminoalkyl, phosphoalkyl, alkyl sulfoxide, alkyl sulfone, alkyl sulfide, tetrahydropyran, tetrahydrothiapyran, thioalkyl, haloalkyl, haloalkenyl, haloalkynyl, alkyl ester, a site-directing molecule, a catalytic group, a reporter group, a binding agent, or a couple that is coupled to a site-directing molecule, to a catalytic group, to a reporter group, or to a binding agent;
- ii) hydrogen, alkyl, aminoalkyl, alkylsulfone, carboxy alkyl, carboxyamidealkyl, phospho alkyl, alkyl sulfoxide, alkyl sulfone, alkyl sulfide, haloalkyl, aryl, N-oxide, dialkylamino, carbamate, or arylsulfonyl;

wherein odd-numbered R substituents are other than hydrogen and at least one odd numbered R substituent is selected from the group consisting of carboxy and alkyl ester

126. (New) A composition comprising a calix[n]pyrrole macrocycle that has n pyrrole rings linked in α positions via sp^3 hybridized *meso*-carbon atoms, wherein neither non-pyrrole substituent of the *meso*-carbon atoms is hydrogen and wherein n is 4, 5, 6, 7, or 8; the macrocycle noncovalently-complexed to a molecular or anionic species, wherein the calix[n]pyrrole macrocycle has structure I:



wherein


when n is 4, $p = q = r = s = 0$, $R_1 - R_{16}$ are independently substituents as listed in paragraph i) below, and $R_A - R_D$ are independently substituents as listed in paragraph ii) below;

when n is 5, $p = 1$, $q = r = s = 0$, R_1 to R_{20} are independently substituents as listed in paragraph i) below, and $R_A - R_E$ are independently substituents as listed in paragraph ii) below;

when n is 6, $p = q = 1$, $r = s = 0$, R_1 to R_{24} are independently substituents as listed in paragraph i) below, and $R_A - R_F$ are independently substituents as listed in paragraph ii) below;

when n is 7, $p = q = r = 1$, $s = 0$, R_1 to R_{28} are independently substituents as listed in paragraph i) below, and $R_A - R_G$ are independently substituents as listed in paragraph ii) below;

when n is 8, $p = q = r = s = 1$, R_1 to R_{32} are independently substituents as listed in paragraph i) below, and $R_A - R_H$ are independently substituents as listed in paragraph ii) below;

- 
- i) hydrogen, halide, hydroxyl, alkyl, alkenyl, alkynyl, aryl, alkylaryl, nitro, phospho, formyl, acyl, hydroxyalkyl, alkoxy, hydroxyalkoxy, hydroxyalkenyl, hydroxyalkynyl, saccharide, carboxy, carboxyalkyl, carboxyamide, carboxyamidealkyl, amino, amido, aminoalkyl, phosphoalkyl, alkyl sulfoxide, alkyl sulfone, alkyl sulfide, tetrahydropyran, tetrahydrothiapyran, thioalkyl, haloalkyl, haloalkenyl, haloalkynyl, alkyl ester, a site-directing molecule, a catalytic group, a reporter group, a binding agent, or a couple that is coupled to a site-directing molecule, to a catalytic group, to a reporter group, or to a binding agent;
- ii) hydrogen, alkyl, aminoalkyl, alkylsulfone, carboxy alkyl, carboxyamidealkyl, phospho alkyl, alkyl sulfoxide, alkyl sulfone, alkyl sulfide, haloalkyl, aryl, N-oxide, dialkylamino, carbamate, or arylsulfonyl;

wherein odd-numbered R substituents are other than hydrogen and at least one even numbered R substituent is selected from the group consisting of carboxy and alkyl ester.

127. (New) A composition comprising a calix[n]pyrrole macrocycle that has n pyrrole rings linked in α positions via sp^3 hybridized *meso*-carbon atoms, wherein neither non-pyrrole substituent of the *meso*-carbon atoms is hydrogen and wherein n is 4, 5, 6, 7, or 8; the macrocycle noncovalently-complexed to a halide anion.

128. (New) The composition of claim 127 wherein the halide anion is chloride.

129. (New) The composition of claim 127 wherein the halide anion is fluoride.

130. (New) The composition of claim 127, wherein the halide anion is selected from the group consisting of chloride and fluoride.

131. (New) A composition comprising a calix[n]pyrrole macrocycle that has n pyrrole rings linked in α positions via sp^3 hybridized *meso*-carbon atoms, wherein neither non-pyrrole substituent of the *meso*-carbon atoms is hydrogen and wherein n is 4, 5, 6, 7, or 8; the macrocycle noncovalently-complexed to a molecule containing a phosphate.

132. (New) A composition comprising a calix[n]pyrrole macrocycle that has n pyrrole rings linked in α positions via sp^3 hybridized *meso*-carbon atoms, wherein neither non-pyrrole substituent of the *meso*-carbon atoms is hydrogen and wherein n is 4, 5, 6, 7, or 8; the macrocycle noncovalently-complexed to an oxoanion.


133. (New) A composition comprising a calix[n]pyrrole macrocycle that has n pyrrole rings linked in α positions via sp^3 hybridized *meso*-carbon atoms, wherein neither non-pyrrole substituent of the *meso*-carbon atoms is hydrogen and wherein n is 4, 5, 6, 7, or 8; the macrocycle noncovalently-complexed to a radioactive anion.

134. (New) A composition comprising a calix[n]pyrrole macrocycle that has n pyrrole rings linked in α positions via sp^3 hybridized *meso*-carbon atoms, wherein neither non-pyrrole substituent of the *meso*-carbon atoms is hydrogen and wherein n is 4, 5, 6, 7, or 8; the macrocycle noncovalently-complexed to an alcohol.

135. (New) A composition comprising a calix[n]pyrrole macrocycle that has n pyrrole rings linked in α positions via sp^3 hybridized *meso*-carbon atoms, wherein neither non-pyrrole substituent of the *meso*-carbon atoms is hydrogen and wherein n is 4, 5, 6, 7, or 8; the macrocycle noncovalently-complexed to urea.

136. (New) A composition comprising a calix[n]pyrrole macrocycle that has n pyrrole rings linked in α positions via sp^3 hybridized *meso*-carbon atoms, wherein neither non-pyrrole substituent of the *meso*-carbon atoms is hydrogen and wherein n is 4, 5, 6, 7, or 8; the macrocycle noncovalently-complexed to an ion pair.

137.(New) A composition comprising a calix[n]pyrrole macrocycle that has n pyrrole rings linked in α positions via sp^3 hybridized *meso*-carbon atoms, wherein neither non-pyrrole substituent of the *meso*-carbon atoms is hydrogen and wherein n is 4, 5, 6, 7, or 8; the macrocycle noncovalently-complexed to a zwitterion.



138. (New) A composition comprising a calix[n]pyrrole macrocycle that has n pyrrole rings linked in α positions via sp^3 hybridized *meso*-carbon atoms, wherein neither non-pyrrole substituent of the *meso*-carbon atoms is hydrogen and wherein n is 4, 5, 6, 7, or 8; the macrocycle noncovalently-complexed to a molecular species selected from the group consisting of a molecule containing a phosphate, an alcohol, and urea; or noncovalently-complexed to an anionic species selected from the group consisting of an oxoanion, a radioactive anion, an ion pair, and a zwitterion.

139. (New) A composition comprising a calix[n]pyrrole macrocycle that has n pyrrole rings linked in α positions via sp^3 hybridized *meso*-carbon atoms, wherein neither non-pyrrole substituent of the *meso*-carbon atoms is hydrogen and wherein n is 4, 5, 6, 7, or 8; the macrocycle noncovalently-complexed to a molecular species selected from the group consisting of a molecule containing a phosphate, an alcohol, and urea.

140. (New) A composition comprising a calix[n]pyrrole macrocycle that has n pyrrole rings linked in α positions via sp^3 hybridized *meso*-carbon atoms, wherein neither non-pyrrole substituent of the *meso*-carbon atoms is hydrogen and wherein n is 4, 5, 6, 7, or 8; the macrocycle noncovalently-complexed to an anionic species selected from the group consisting of an oxoanion, a radioactive anion, an ion pair, and a zwitterion.--

REMARKS

Claims 118-140 are presently pending in the application.

At the outset, it is noted that Information Disclosure Statements were filed on July 20, 2001 and on March 28, 2002. However, the Examiner has not acknowledged the IDSs, nor returned the initialed PTO-1449 forms. Consideration of the IDSs and